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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,514	06/28/2000	Li Gong	83000.930C/P2136/AES	1326

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EXAMINER

MEISLAHN, DOUGLAS J

ART UNIT PAPER NUMBER

2132

DATE MAILED: 09/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/607,514

Applicant(s)

GONG, LI

Examiner

Douglas J. Meislahn

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 01 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is in response to the amendment filed 01 July 2002 that amended claims 1, 8, 11, 18, 22, and 28.

### ***Response to Arguments***

2. Applicant's arguments filed 01 July 2002 have been fully considered but they are not persuasive. Applicant states that Fischer "... does not disclose or suggest taking or using a snapshot of an object where the snapshot represents the object at a point of execution." Applicant's rationale behind this conclusion is that Fischer's cell is static and thus cannot correspond with a live object. While the cell is indeed static, it represents a live object, as disclosed in lines 20-23 of column 8. Specifically, a cell captures an object's execution state at the time the cell was produced.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 27 recites the limitation "said second object" in the first line of the claim. There is insufficient antecedent basis for this limitation in the claim. The examiner assumes that this was meant to read "said second module" and has treated the claim using that presumption.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fischer (EPO 0 638 860 A2).

In lines 38-45 of column 5, Fischer talks about signing only the critical portions of a cell. The cell is made up of objects. Applicant's snapshot, which is a copy of a main memory, directly corresponds to the critical portions of the cell.

Digital signatures are inherently verified. Subsequently, the information that the signature was authenticating is accessed.

Fischer says that this cell can itself be treated as an object in lines 20-23 of column 8. Figure 10 shows the signatures, element 122, and the critical portions, element 116, stored in a cell.

Digital signatures are inherently invalidated when the data which they are supposed to authenticate is changed.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-7, 15-17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Schneier (Applied Cryptography).

Fischer displays a system of signing only the critical objects that make up a larger object. As can be seen in figure 10 of Fischer, elements 122 and 123, the authenticating signatures and the certificate specification set, correspond to two signatures used to authenticate the critical objects. Fisher does not say anything about one of the signatures being made from the critical objects. On page 39, Schneier shows a digital signature that is made by encrypting a message-to-be-authenticated with a private key. Decryption using the corresponding public key not only retrieves the data, but also indicates that the data was encrypted by the private key's holder. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the critical objects of Fischer to generate their signatures so that the signatures could be used as proofs against data.

10. Claims 8-10 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Chaplin (5315655).

Fischer displays a system of signing only the critical objects that make up a larger object. As shown by element 114 of figure 10, Fischer's system can encrypt the cells and the digital signatures. Encryption keys are inherently generated prior to encryption. Fischer does not say that the leftover unencrypted objects are deleted. Figure 7 of Chaplin clearly shows the encryption of data in part 704 and then the deletion of the unencrypted copy of the data in part 705. Chaplin also teaches

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decryption of data in figure 8. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to delete unencrypted copies of the critical objects after the objects had been encrypted. Unencrypted copies could otherwise be used to circumvent the protection provided by the encryption.

11. Claims 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Schneier.

Fischer in view of Schneier shows a system of signing only the critical objects that make up a larger object where the signature is made from the critical objects. Digital signatures are inherently invalidated when the data which they are supposed to authenticate is changed. In lines 40-50 of column 2, Fischer teaches the advantage of object-oriented programming, saying that it is polymorphic. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement modules that process cells as an object to reap the rewards of polymorphism. At some point this would require the snapshot and signature to be stored within the processing object.

12. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer in view of Schneier as applied to claim 22 above, and further in view of Chaplin.

Fischer in view of Schneier shows a system of signing only the critical objects that make up a larger object where the signature is made from the critical objects. As shown by element 114 of figure 10, Fischer's system can encrypt the cells and the digital signatures. Encryption keys are inherently generated prior to encryption. Fischer does not say that the leftover unencrypted objects are deleted. Figure 7 of Chaplin

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clearly shows the encryption of data in part 704 and then the deletion of the unencrypted copy of the data in part 705. Chaplin also teaches decryption of data in figure 8. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to delete unencrypted copies of the critical objects after the objects had been encrypted. Unencrypted copies could otherwise be used to circumvent the protection provided by the encryption.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Meislahn whose telephone number is (703) 305-1338. The examiner can normally be reached on between 9 AM and 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barrón can be reached on (703) 305-1830. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Douglas J. Meislahn  
Examiner  
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DM  
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September 16, 2002

  
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